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III. TWO BILLION YEARS OF PROKARYOTIC CELLS AND THE EMERGENCE OF EUKARYOTES

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Abstract

A brief resumé will be made of the earliest evidence of cells and cellular organization from carbonaceous sediments of the early Precambrian of South Africa and Rhodesia.

It is proposed to make a brief synopsis of the general level of morphological organization by the middle of Precambrian time at about the midpoint in the history of the earth, centering the discussion on the microbiota of the Gunflint chert as an example of a "benchmark" in the level of evolution of life at approximately 2 x 10^9 years ago.

With the assumption that the Gunflint biota is composed solely of prokaryotic organisms it is of interest to examine subsequent Precambrian fossil assemblages with a view to evaluating critically the evidence presented in recent years for the appearance of eukaryotic organisms in the late Precambrian. In this connection, various aspects of cell clumping, lysis and laboratory controlled silicification of blue-green algal cells will be considered.

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